

Harnessing the Power of Administrative Data Linkage: Results from The Ontario Best Practices Research Initiative Clinical Linked Cohort

Mark Tatangelo (University of Toronto, Toronto); Xiuying Li (Toronto General Hospital, University Health Network, Toronto); Angela Cesta (University Health Network, Toronto); Michael Paterson (Institute for Clinical Evaluative Sciences, Toronto); Jessica Widdifield (McGill University, Montreal); Claire Bombardier (University of Toronto, Toronto)

Objectives: The Ontario Best Practices Research Initiative (OBRI) is a longitudinal observational cohort of rheumatoid arthritis (RA) patients recruited from 63/162 Ontario rheumatologists. This abstract describes the “OBRI RA Clinical Linked Cohort”; it includes 95% of OBRI cohort patients (all who consented to administrative data linkage).

Methods: In January 2014, clinical data from patient baseline visits were linked with the Institute for Clinical Evaluative Sciences (ICES) administrative data, providing a complete profile of all medical services used. We included all patients with a rheumatologist enrollment form who also completed a telephone questionnaire administered by a trained interviewer within 60 days (n=1841) as of July 15, 2013. Exclusion criteria were patients who had not consented to ICES linkage, and patients without provincial health care coverage. Selection of data for linkage was conducted using expert opinion from the OBRI Planning and Review board including clinicians, academics and ICES data experts and encompassed 6 main categories: Physician information (de-identified investigators, joint counts), patient information (demographics, SES, smoking, insurance, comorbid conditions), medications (current and past), and RA history. In addition, standard questionnaires related to pregnancy, tuberculosis, employment/work productivity, HAQDI, RADAI, Quality of Life (EQ5D), DAS 28 score, ESR and CRP were linked. Regular data logic checks were performed on the clinical cohort to ensure high quality data. All patient reported medications were coded using ATC WHO codes reviewed by a pharmacist and 2 senior pharmacy students.

Results: Baseline data from the OBRI were linked with ICES administrative data, with n=1841 patients linked. Our administrative data linked clinical sample was predominantly female (88%), caucasian (85%) and English speaking (93%) with an average age of 57.3 and disease duration of 8.5 years. 26% of patients received a new biologic at baseline and 51% received a new DMARD at baseline. Patients had a mean DAS28 of 4.5 SD(1.5), CDAI 21.8 SD(13.6) and HAQ DI 1.2 SD(0.8). Researchers have the ability to look forward and backward through administrative databases including medication and health care resource utilization with adjustment for baseline clinical confounding.

Conclusion: Our unique dataset is the largest existing linked dataset and the first to include patients irrespective of medication course. The depth and breadth of our clinical covariates linked with administrative data will be an indispensable tool for researchers and health care stakeholders answering questions about of drug safety and efficacy, clinical practice patterns, and health care resource use.